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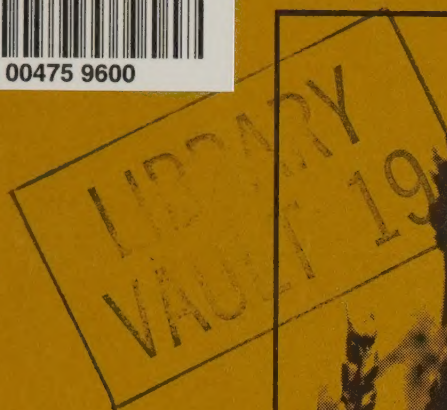
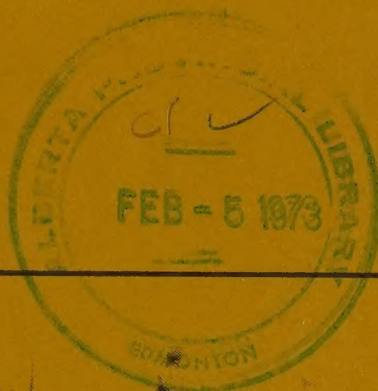
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# ALBERTA CROP enterprise analysis

ECONOMICS DIVISION, ALBERTA DEPARTMENT OF AGRICULTURE

## 1970

*Production Economics Branch*



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**1970**  
**ALBERTA**  
**CROP ENTERPRISE ANALYSIS**

by

W.G. Kirk

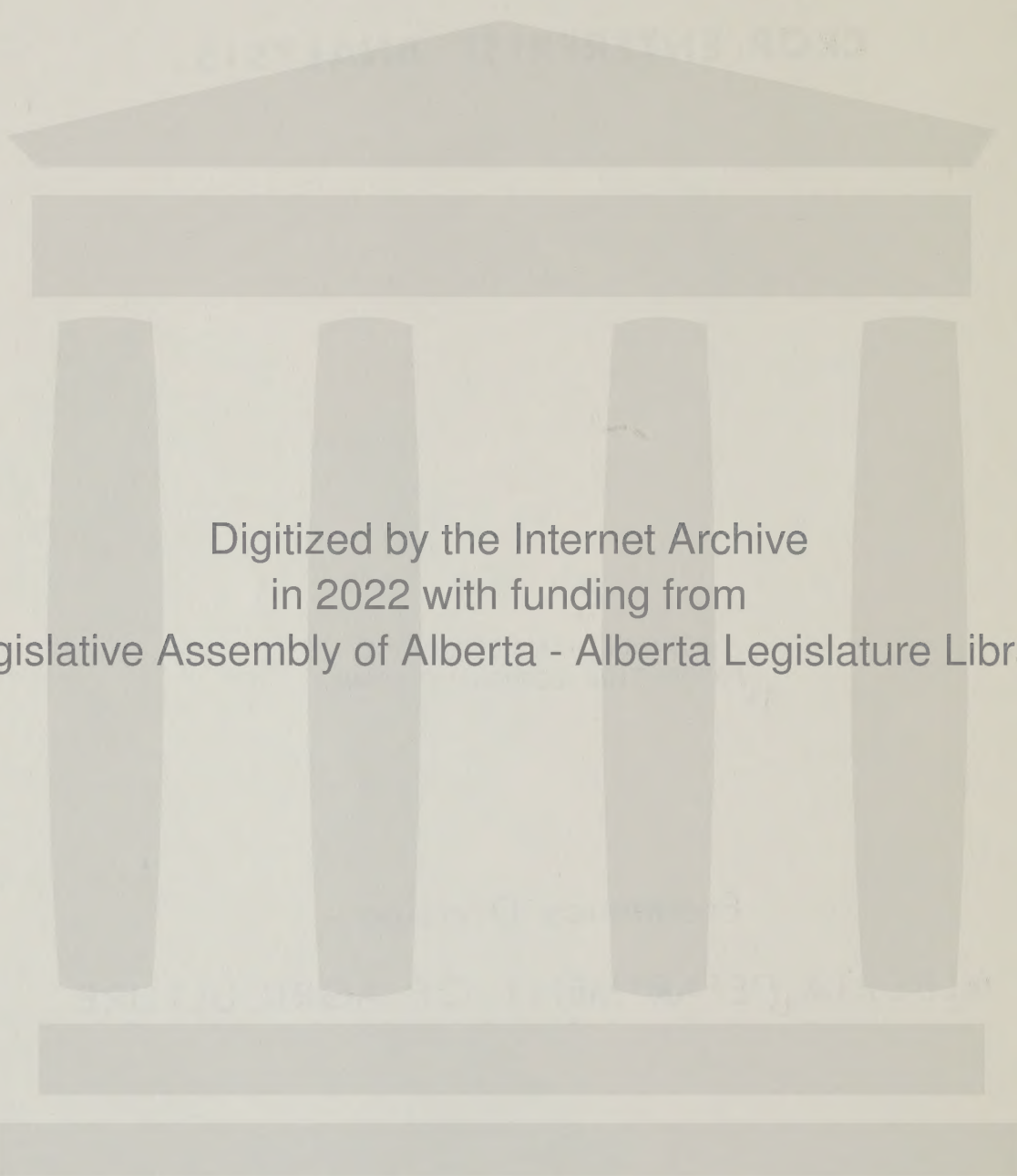
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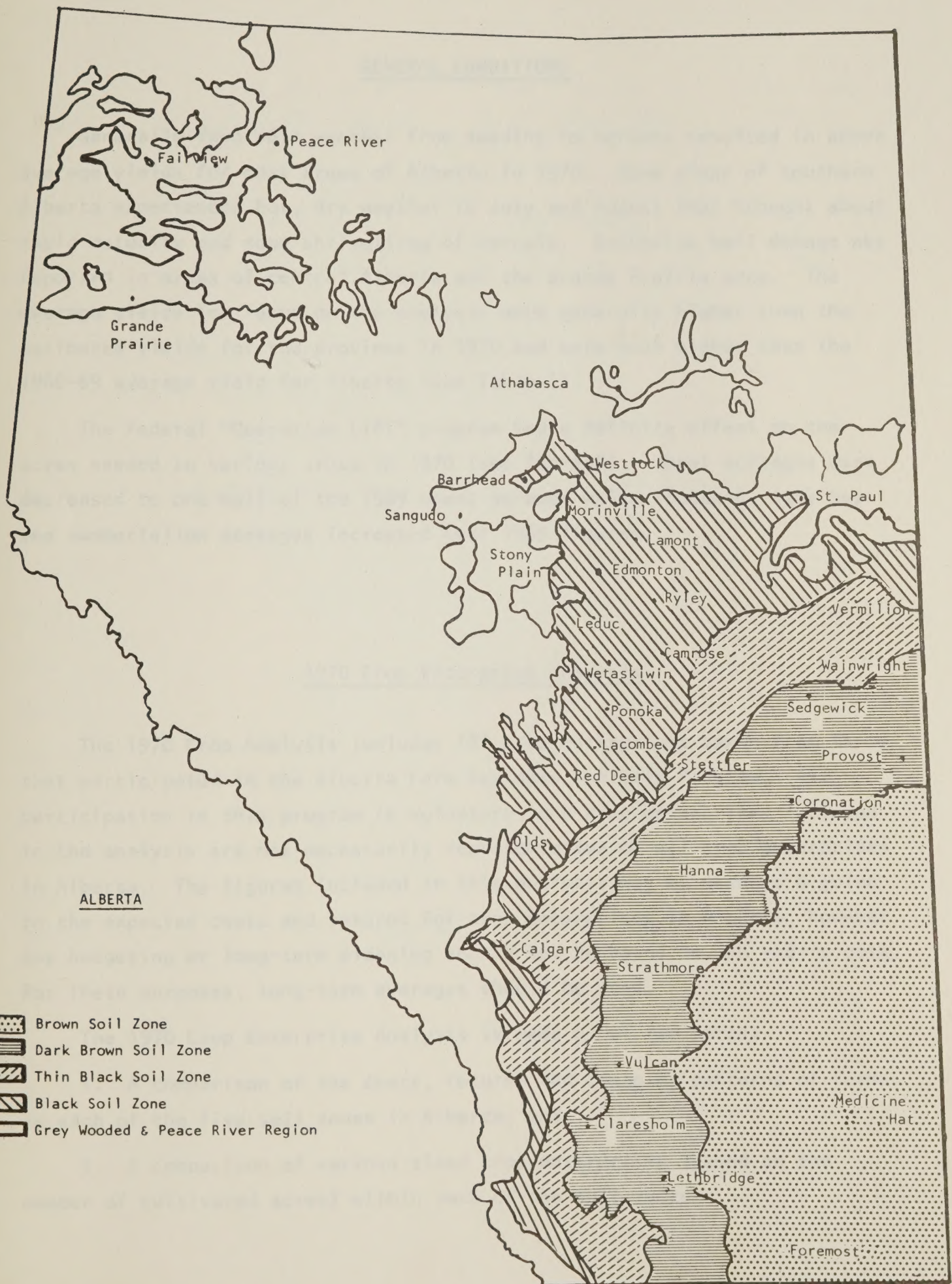
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## GENERAL CONDITIONS

Generally favorable weather from seeding to harvest resulted in above average yields for most areas of Alberta in 1970. Some areas of southern Alberta experienced hot, dry weather in July and August that brought about rapid maturity and some shrivelling of kernels. Extensive hail damage was reported in areas of central Alberta and the Grande Prairie area. The average yields for farms on the analysis were generally higher than the estimated yields for the province in 1970 and were much higher than the 1960-69 average yield for Alberta (see Table 1).

The Federal "Operation LIFT" program had a definite effect on the acres seeded to various crops in 1970 (see Table 2). Wheat acreages were decreased to one half of the 1969 wheat acreage while rapeseed, tame hay and summerfallow acreages increased over 1969 figures.

## 1970 Crop Enterprise Analysis

The 1970 Crop Analysis includes 181 crop enterprises taken from farms that participated in the Alberta Farm Business Analysis Program. As participation in this program is voluntary, the crop enterprises included in the analysis are not necessarily representative of all crop enterprises in Alberta. The figures included in this analysis may be used as a guide to the expected costs and returns for crop enterprises in Alberta, however any budgeting or long-term planning should not be based on one year's data. For these purposes, long-term averages should be used.

The 1970 Crop Enterprise Analysis is made up of two parts:

1. A comparison of the costs, returns and cropping patterns of farms in each of the five soil zones in Alberta; and
2. A comparison of various sized crop enterprises (based on the number of cultivated acres) within each of the soil zones.







Table 1 Crop Yields

<u>Crop</u>	<u>1970 Estimated Yields for Alberta</u>	<u>Actual Yields for Analysis Farms</u>	<u>1960 - 1969 Average Yields for Alberta</u>
Wheat	27.7 bus.	28.4 bus.	23.3 bus.
Oats	57.1 bus.	48.9 bus.	45.1 bus.
Barley	42.1 bus.	42.8 bus.	34.5 bus.
Rapeseed	17.6 bus.	19.8 bus.	15.1 bus.

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Source: Statistics of Agriculture for Alberta

Table 2 Acreages of Crops in Alberta for 1969 and 1970

<u>Crop</u>	<u>1970</u>	<u>1969</u>
Wheat	2.60 million	5.30 million
Oats	2.05 million	2.00 million
Barley	4.70 million	5.10 million
Rapeseed	1.45 million	0.82 million
Tame Hay	3.40 million	2.90 million
Summerfallow	8.90 million	7.40 million

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Source: Statistics of Agriculture for Alberta







### GENERAL SOIL ZONE COMPARISON

As crops and cropping practices vary with the various climatic areas of the province, the crop enterprises from each area were grouped to give five groupings which correspond to the Brown, Dark Brown, Thin Black, Black and Grey Wooded (Peace River) soil zones. Three tables were prepared to compare the cropping practices and costs and returns for the five soil groups. Table 3(a) illustrates the number and percentage of cultivated acres that were used for various crops in 1970. In general there was a decrease in wheat acres and an increase in summerfallow acres over 1969 figures in all areas. The percentage of cultivated acres seeded to barley increased in the Brown and Black soil zones while hay and silage acreages increased in the Thin Black soil zone.

Acres seeded to wheat still made up the largest percentage of cultivated acres in the Brown and Dark Brown soil zones with the Brown zone having 20.7% and the Dark Brown 13% of their cultivated acres in wheat. Summerfallow made up 39.8% and 39.9% of the total cultivated acres for the Brown and Dark Brown soil zones respectively.

Farms in the Black soil zone seeded an average of 47.1% of their cultivated acres to barley in 1970, while farms in the Peace River region seeded 11.7% of their cultivated acres to rapeseed. These percentages were greater than the corresponding figures for the other areas of the province.

Table 3(b) shows the average yields and value of production<sup>1/</sup> per acre for farms in the various soil zones. Value of production per acre varied from \$20.99 for oats in the Peace River area to \$68.60 for rapeseed in the Brown soil zone. The variation in value of production per acre was due to varying yields as well as variations in the price per bushel assigned to the grain.

Table 3(c) gives the costs and returns per cultivated acre for the five soil zones as well as the averages for all crop enterprises. The value

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<sup>1/</sup> See definitions, page 16.





of production per cultivated acre for farms in the Black soil zone was substantially higher than for the other soil zones. The main reason for this is the very small percentage of cultivated acres in summerfallow (6.4%) in the Black soil zone.

The return over variable costs and returns to all labour, management and investment was also highest for the crop enterprises in the Black soil zone.

However, when a 7% interest on investment charge was removed from the return to labour, management and investment, the resulting return to management and labour for enterprises in the Black soil zone was a negative \$1.50 per cultivated acre.

Only the Dark Brown and Peace River areas had a positive return to unpaid labour and management in 1970. This is not to say that crop enterprises in the other soil zone groups were not profitable, rather it indicates that their return on investment was less than 7%.

Direct cash costs were highest for enterprises in the Black soil zone. This was due to high fertilizer costs (more fertilizer used) and high custom work expenses.

Both depreciation and interest on investment were higher for the Black soil zone than for the other soil zones. The investment per cultivated acre figure at the bottom of Table 3(c) shows the large per acre investment in land and machinery for farms in the Black and Thin Black soil zones.





Table 3(a)

Distribution of Crop Acres

	<u>Distribution of Crop Acres</u>					<u>All Farms</u>
	<u>Brown</u>	<u>Dark Brown</u>	<u>Thin Black</u>	<u>Black</u>	<u>Peace River</u>	
Number of Farms	45	26	36	19	55	181
Cultivated Acres Per Farm	667	1185	790	550	675	757
<u>Acres:</u>						
Wheat	138	154	48	3	31	76
Barley	77	121	151	259	119	130
Oats	24	78	66	36	44	48
Rapeseed	10	40	57	13	79	45
Other Cereal Crops	47	60	27	16	14	32
Specialty Crops & Forage Seed	24	5	2	-	47	21
Hay & Silage	54	137	153	131	123	115
Improved Pasture	28	116	35	57	49	51
Summerfallow & Breaking	265	474	251	35	169	239
<u>% of Cultivated Acres in:</u>						
Wheat	20.7	13.0	6.1	0.5	4.6	10.0
Barley	11.5	10.2	19.1	47.1	17.6	17.2
Oats	3.6	6.6	8.4	6.5	6.5	6.3
Rapeseed	1.5	3.4	7.2	2.4	11.7	5.9
Other Cereal Crops	7.0	5.1	3.4	2.9	2.1	4.2
Specialty Crops & Forage Seed	3.6	0.4	0.2	-	6.9	2.8
Hay & Silage	8.1	11.6	19.4	23.8	18.2	15.2
Improved Pasture	4.2	9.8	4.4	10.4	7.3	6.7
Summerfallow & Breaking	39.8	39.9	31.8	6.4	25.1	31.7

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Table 3(b)

Value of Production Per Acre

	<u>Brown</u>	<u>Dark Brown</u>	<u>Thin Black</u>	<u>Black</u>	<u>Peace River</u>	<u>All Farms</u>
--	--------------	-----------------------	-----------------------	--------------	------------------------	----------------------

Number of Farms

45

26

36

19

55

181

Wheat:

Yield per acre

26.5 bus.

31.3 bus.

30.7 bus.

37.6 bus.

25.9 bus.

28.4 bus.

Average Price/Bushel

\$ 1.31

\$ 1.25

\$ 1.14

\$ 1.23

\$ 1.21

\$ 1.26

Gross Return/Acre

\$34.75

\$39.23

\$35.10

\$46.10

\$31.45

\$35.72

Barley:

Yield per acre

37.8 bus.

51.8 bus.

46.4 bus.

51.1 bus.

31.9 bus.

42.8 bus.

Average Price/Bushel

\$ 0.74

\$ 0.69

\$ 0.72

\$ 0.68

\$ 0.67

\$ 0.70

Gross Return/Acre

\$27.91

\$35.81

\$33.29

\$34.62

\$21.22

\$29.78

Oats:

Yield per acre

50.5 bus.

43.7 bus.

48.0 bus.

79.2 bus.

44.9 bus.

48.9 bus.

Average Price/Bushel

\$ 0.55

\$ 0.51

\$ 0.49

\$ 0.48

\$ 0.47

\$ 0.49

Gross Return/Acre

\$27.80

\$22.08

\$23.65

\$37.79

\$20.99

\$24.19

Rapeseed:

Yield per acre

27.4 bus.

20.9 bus.

19.1 bus.

27.0 bus.

18.6 bus.

19.8 bus.

Average Price/Bushel

\$ 2.50

\$ 2.39

\$ 2.31

\$ 2.53

\$ 2.40

\$ 2.38

Gross Return/Acre

\$68.60

\$49.80

\$44.20

\$68.15

\$44.62

\$47.14





Table 3(c)

## Costs and Returns Per Cultivated Acre

	Brown	Dark Brown	Thin Black	Black	Peace River	All Farms
Number of Farms	45	26	36	19	55	181
Value of Production/Acre	\$ 23.87	\$ 18.06	\$ 21.20	\$ 34.31	\$ 18.41	\$ 21.32
<u>Costs:</u>						
Seed	\$ 0.94	\$ 0.76	\$ 1.01	\$ 1.42	\$ 0.82	\$ 0.92
Fertilizer and Chemicals	1.23	0.87	2.33	3.93	1.19	1.58
Other Cash Costs	0.54	0.60	0.75	1.34	0.57	0.67
Total Direct Cash Costs	\$ 2.71	\$ 2.23	\$ 4.09	\$ 6.69	\$ 2.58	\$ 3.17
Machinery Operating Costs	4.06	2.41	2.77	3.71	2.44	2.95
Building Maintenance & Utilities	0.70	0.38	0.35	0.41	0.32	0.43
Total Variable Cost (Excl. Labour)	\$ 7.47	\$ 5.02	\$ 7.21	\$ 10.81	\$ 5.34	\$ 6.55
Depreciation	4.43	2.87	4.56	6.14	3.58	4.01
Interest on Investment (7%)	7.58	5.67	9.48	11.88	7.07	7.74
Taxes & Other Overhead	1.33	1.04	1.14	2.19	0.86	1.16
Rent (Cash & Share)	1.38	1.07	2.09	2.56	0.12	1.20
Total Fixed Costs	\$ 14.72	\$ 10.65	\$ 17.27	\$ 22.77	\$ 11.63	\$ 14.11
Labour Cost	6.66	3.57	4.90	5.73	4.50	4.94
TOTAL PRODUCTION COSTS	\$ 28.85	\$ 19.24	\$ 29.38	\$ 39.31	\$ 21.47	\$ 25.60
Return over Var. Cost (Excl. Labour)	\$ 16.41	\$ 13.04	\$ 13.99	\$ 23.50	\$ 13.07	\$ 14.77
Return to All Labour, Management & Investment	10.64	9.13	8.28	15.17	8.64	9.61
Return to Unpaid Labour & Mgmt.	- 0.25	1.57	4.32	- 1.50	0.95	- 0.47
Land Investment/Cultivated Acre	\$ 63.07	\$ 66.51	\$ 126.74	\$ 138.56	\$ 71.74	\$ 85.33
Machinery Investment/Cult. Acre	28.77	16.92	27.18	39.90	25.17	25.66
Bldg., Crops, Supp. Inv./Cult. Acre	24.49	18.24	20.16	24.35	12.16	18.84
Total Investment/Cultivated Acre	\$ 116.33	\$ 101.67	\$ 174.08	\$ 202.81	\$ 109.07	\$ 129.83
Cultivated Acres Per Farm	668	1,185	790	550	675	757





### ENTERPRISE SIZE COMPARISON

To give further information on costs and returns for the crop enterprises, the farms in each soil zone group were divided into size groupings based on the number of cultivated acres.

#### Brown Soil Zone

Farms in the Brown soil zone were divided into 3 groups, 142 to 399 cultivated acres, 400 to 875 cultivated acres and 876 to 4,130 cultivated acres.

All farms included in the 142 to 399 acre group were irrigated farms which accounts for their high gross returns and production costs. The 400 to 875 cultivated acre group included farms with and without irrigation, while the 876 to 4,130 cultivated acre group was made up of dry land farms.

Returns over variable costs (excluding labour) were \$22.76 per cultivated acre for the 142 to 399 acre group, \$20.61 per cultivated acre for the 400 to 875 acre group and \$11.96 per cultivated acre for the 876 to 4,130 cultivated acre group. The return to all labour, management and investment, or the return to the resources invested in the enterprise was \$13.05, \$14.74 and \$7.79 respectively for the three groups.

#### Dark Brown Soil Zone

The Dark Brown soil zone farms were divided into two groups, farms with 320 to 999 cultivated acres and farms with 1,000 to 2,720 cultivated acres. Gross returns for the two groups were similar although both variable and fixed costs per acre were greater for the 320 to 999 acre group giving total production costs of \$21.98 for the 320 to 999 cultivated acre group and \$18.30 per acre for the 1,000 to 2,720 cultivated acre group.

The return to all labour, management and investment was \$7.64 for the 320 to 999 cultivated acre group and \$9.64 for the 1,000 to 2,720 cultivated acre group. A lower investment per acre allowed the larger farms a return to unpaid labour and management of \$2.00 per acre compared to \$0.29 per acre for the 320 to 999 cultivated acre group.





Table 4(a)

Distribution of Crop Acres

	<u>Brown</u>	<u>Brown</u>	<u>Brown</u>	<u>Dark Brown</u>	<u>Dark Brown</u>
Farm Size (Cult. Acres)	(142- 399)	(400- 875)	(876 - 4130)	(320- 999)	(1000 - 2720)
Number of Farms	24	13	8	11	15
Cultivated Acres Per Farm	264	580	2021	707	1536

Acres:

Wheat	46	156	384	99	195
Barley	37	46	251	65	162
Oats	15	19	59	34	110
Rapeseed	-	-	54	33	45
Other Cereal Crops	12	43	164	45	73
Hay & Silage	64	36	55	78	181
Specialty Crops & Forage Seed	17	52	-	9	3
Summerfallow & Breaking	55	208	986	301	593
Improved Pasture	18	20	68	43	174

% of Cultivated Acres in:

Wheat	17.4	26.9	19.0	14.0	12.7
Barley	14.0	7.9	12.4	9.2	10.5
Oats	5.7	3.3	2.9	4.8	7.1
Rapeseed	-	-	2.7	4.7	2.9
Other Grain	4.6	7.5	8.1	6.4	4.8
Hay & Silage	24.2	6.2	2.7	11.0	11.8
Specialty Crops & Forage Seed	6.4	8.9	-	1.3	0.2
Summerfallow & Breaking	20.8	35.9	48.8	42.6	38.7
Improved Pasture	6.9	3.4	3.4	6.0	11.3





Table 4(b)

Value of Production Per Acre

	<u>Brown</u>	<u>Brown</u>	<u>Brown</u>	<u>Dark Brown</u>	<u>Dark Brown</u>
Farm Size (Cult. Acres)	(142- 399)	(400- 875)	(876 - 4130)	(320- 999)	(1000 - 2720)
Number of Farms	24	13	8	11	15

Wheat:

Yield Per Acre	32.4 bus.	29.7 bus.	22.2 bus.	26.3 bus.	33.2 bus.
Average Price/Bushel	\$ 1.34	\$ 1.35	\$ 1.27	\$ 1.27	\$ 1.25
Gross Return/Acre	\$43.38	\$40.09	\$28.10	\$33.31	\$41.43

Barley:

Yield Per Acre	36.4 bus.	36.9 bus.	38.7 bus.	46.9 bus.	53.2 bus.
Average Price/Bushel	\$ 0.74	\$ 0.76	\$ 0.73	\$ 0.71	\$ 0.69
Gross Return/Acre	\$26.86	\$28.07	\$28.32	\$33.13	\$36.61

Oats:

Yield Per Acre	47.4 bus.	54.2 bus.	51.0 bus.	66.0 bus.	38.7 bus.
Average Price/Bushel	\$ 0.52	\$ 0.60	\$ 0.54	\$ 0.50	\$ 0.51
Gross Return/Acre	\$24.57	\$32.66	\$27.77	\$32.69	\$19.71

Rapeseed:

Yield Per Acre	-	-	27.4 bus.	24.9 bus.	18.7 bus.
Average Price/Bushel	-	-	\$ 2.50	\$ 2.44	\$ 2.35
Gross Return/Acre	-	-	\$68.60	\$60.79	\$43.89





Table 4(c)

Brown and Dark Brown Soil Zones  
Costs and Returns Per Cultivated Acre

	<u>Brown</u>	<u>Brown</u>	<u>Brown</u>	<u>Dark Brown</u>	<u>Dark Brown</u>
Farm Size in Cultivated Acres	(142 - 399)	(400 - 875)	(876 - 4130)	(320 - 999)	(1000 - 2720)
Number of Farms	24	13	8	11	15
Value of Production/Acre	\$ 37.80	\$ 29.19	\$ 15.93	\$ 18.09	\$ 18.05
<u>Costs:</u>					
Seed	\$ 1.47	\$ 1.16	\$ 0.62	\$ 1.05	\$ 0.66
Fertilizer & Chemicals	2.88	1.54	0.44	0.63	0.95
Other Cash Costs	<u>1.53</u>	<u>0.54</u>	<u>0.16</u>	<u>0.57</u>	<u>0.60</u>
Total Direct Cash Costs	\$ 5.88	\$ 3.24	\$ 1.22	\$ 2.25	\$ 2.21
Machinery Operating Costs	7.89	4.52	2.35	2.78	2.28
Bldg. Maintenance & Utilities	<u>1.27</u>	<u>0.82</u>	<u>0.40</u>	<u>0.49</u>	<u>0.35</u>
Total Variable Cost (Excl. Labour)	\$ 15.04	\$ 8.58	\$ 3.97	\$ 5.52	\$ 4.84
Depreciation	7.37	4.26	3.36	3.22	2.76
Interest on Investment (7%)	9.72	6.70	7.14	6.39	5.42
Taxes & Other Overhead	2.34	1.61	0.81	1.71	0.81
Rent (Cash & Share)	<u>1.35</u>	<u>3.11</u>	<u>0.58</u>	<u>0.53</u>	<u>1.25</u>
Total Fixed Costs	\$ 20.78	\$ 15.68	\$ 11.89	\$ 11.85	\$ 10.24
Labour Cost	<u>12.96</u>	<u>8.01</u>	<u>3.59</u>	<u>4.61</u>	<u>3.22</u>
TOTAL PRODUCTION COST	\$ 48.78	\$ 32.27	\$ 19.45	\$ 21.98	\$ 18.30
Return Over Variable Cost (Excluding Labour)	\$ 22.76	\$ 20.61	\$ 11.96	\$ 12.57	\$ 13.21
Return to All Labour, Management & Investment	13.05	14.74	7.79	7.64	9.64
Return to Unpaid Labour & Management	0.00	3.33	- 2.03	0.29	2.00
Land Investment/Cultivated Acre	\$ 83.41	\$ 63.90	\$ 54.72	\$ 67.83	\$ 66.06
Machinery Investment/Cult. Acre	49.35	30.20	20.05	21.00	15.55
Bldg., Crops, Supp. Inv./Cult. Ac.	<u>17.78</u>	<u>17.41</u>	<u>30.43</u>	<u>16.02</u>	<u>18.99</u>
Total Investment/Cultivated Acre	\$150.54	\$111.51	\$105.20	\$104.85	\$100.60
Labour Hours/Cultivated Acre	N.A.*	N.A.*	2.1 hr.	N.A.*	1.7 hr.
Cultivated Acres Per Farm	264	580	2,021	707	1,536

\* N.A.: Not Available



### Thin Black Soil Zone

Some differences in cropping practices were evident when farms in the Thin Black soil zone were divided into three size categories, 326 to 626 cultivated acres, 627 to 891 cultivated acres and 892 to 2,209 cultivated acres. Farms in the 326 to 626 cultivated acre group had a higher percentage of cultivated acres in oats and hay and a smaller percentage of cultivated acres in rapeseed as compared to the larger farms. The 892 to 2,209 cultivated acre group seeded 9.3% of their cultivated acres to rapeseed and summerfallowed 37.0% of their cultivated acres in 1970 [see Table 3(a)].

The value of production per cultivated acre varies from \$19.66 per acre for the 892 to 2,209 cultivated acre group to \$22.88 per acre for the 326 to 626 cultivated acre group. Both variable costs and fixed costs were highest for the 326 to 626 cultivated acre group. Returns to all labour, management and investment were \$6.86, \$9.41 and \$8.38 for the three groups respectively.

### Black Soil Zone

Farms in the Black soil zone were divided into enterprises with 133 to 499 cultivated acres and those with 500 to 850 cultivated acres. Although costs and returns for the two groups were similar, farms in the 133 to 499 cultivated acre group had a higher percentage of cultivated acres in hay and improved pasture than the 500 to 850 cultivated acre group. Similarly the 500 to 850 cultivated acre group had 51.1% of their cultivated acres in barley as compared to 33.8% for the 133 to 499 cultivated acre group. The hours of labour per cultivated acre were less for the larger operations indicating they were making more efficient use of their labour.

### Peace River Region (Grey Wooded Soil Zone)

Cropping practices similar to those in the Thin Black soil zone were observed when the Peace River crop enterprises were divided into 3 size groups, 221 to 510 cultivated acres, 511 to 768 cultivated acres and 769 to 1,422 cultivated acres. The 221 to 510 cultivated acre group had





Table 5(a)

Distribution of Crop Acres

	<u>Thin Black</u>	<u>Thin Black</u>	<u>Thin Black</u>	<u>Black</u>	<u>Black</u>
Farm Size (Cult. Acres)	(326- 626)	(627- 891)	(892- 2209)	(133- 499)	(500- 850)
Number of Farms	15	11	9	10	8
Cultivated Acres Per Farm	466	783	1394	312	664

Acres:

Wheat	24	55	88	2	2
Barley	93	124	288	105	339
Oats	64	63	78	21	53
Rapeseed	7	64	129	-	10
Other Cereal Crops	13	20	63	17	18
Hay & Silage	127	167	200	87	145
Specialty Crops & Forage Seed	6	-	-	-	-
Improved Pasture	20	63	32	50	52
Summerfallow & Breaking	112	227	516	30	45

% of Cultivated Acres in:

Wheat	5.2	7.0	6.3	0.6	0.4
Barley	20.0	15.8	20.7	33.8	51.1
Oats	13.7	8.0	5.6	6.7	8.0
Rapeseed	1.5	8.2	9.3	-	1.5
Other Grain	2.8	2.6	4.5	5.4	2.7
Hay & Silage	27.3	21.3	14.3	27.9	21.8
Specialty Crops & Forage Seed	1.3	-	-	-	-
Improved Pasture	4.3	8.0	2.3	16.0	7.8
Summerfallow & Breaking	23.9	29.1	37.0	9.6	6.7





Table 5(b)

Value of Production Per Acre

	<u>Thin Black</u>	<u>Thin Black</u>	<u>Thin Black</u>	<u>Black</u>	<u>Black</u>
Farm Size (Cultivated Ac.)	(326- 626)	(627- 891)	(892 - 2209)	(133- 499)	(500- 850)
Number of Farms	15	11	9	10	8
<u>Wheat:</u>					
Yield Per Acre	28.5 bus.	33.1 bus.	30.0 bus.	35.2 bus.	40.0 bus.
Average Price/Bushel	\$ 1.18	\$ 1.17	\$ 1.10	\$ 1.20	\$ 1.25
Gross Return/Acre	\$33.57	\$38.70	\$33.09	\$42.20	\$50.00
<u>Barley:</u>					
Yield Per Acre	48.7 bus.	52.3 bus.	44.9 bus.	49.5 bus.	46.0 bus.
Average Price/Bushel	\$ 0.68	\$ 0.68	\$ 0.71	\$ 0.70	\$ 0.68
Gross Return/Acre	\$33.08	\$35.78	\$31.87	\$34.76	\$31.48
<u>Oats:</u>					
Yield Per Acre	50.2 bus.	49.5 bus.	46.6 bus.	69.5 bus.	79.3 bus.
Average Price/Bushel	\$ 0.47	\$ 0.52	\$ 0.45	\$ 0.46	\$ 0.48
Gross Return/Acre	\$23.72	\$25.84	\$20.87	\$32.15	\$37.84
<u>Rapeseed:</u>					
Yield Per Acre	22.3 bus.	19.9 bus.	20.1 bus.	-	22.7 bus.
Average Price/Bushel	\$ 1.93	\$ 2.26	\$ 2.17	-	\$ 2.50
Gross Return/Acre	\$43.06	\$45.02	\$43.52	-	\$56.75



Table 5(c)

Thin Black and Black Soil Zones  
Costs and Returns Per Cultivated Acre

	<u>Thin Black</u>	<u>Thin Black</u>	<u>Thin Black</u>	<u>Black</u>	<u>Black</u>
Farm Size in Cultivated Acres	(326- 626)	(627- 891)	(892 - 2209)	(133- 499)	(500- 850)
Number of Farms	15	11	9	10	8
Value of Production/Acre	\$ 22.88	\$ 22.07	\$ 19.66	\$ 30.47	\$ 31.61
<u>Costs:</u>					
Seed	\$ 1.02	\$ 0.98	\$ 1.02	\$ 1.25	\$ 1.32
Fertilizer & Chemicals	2.99	1.82	2.23	2.76	4.20
Other Cash Costs	<u>1.42</u>	<u>0.60</u>	<u>0.47</u>	<u>0.83</u>	<u>1.37</u>
Total Direct Cash Costs	\$ 5.43	\$ 3.40	\$ 3.72	\$ 4.84	\$ 6.89
Machinery Operating Costs	3.13	2.74	2.64	3.75	3.61
Bldg. Maintenance & Utilities	<u>0.37</u>	<u>0.40</u>	<u>0.29</u>	<u>0.71</u>	<u>0.24</u>
Total Variable Cost (Excl. Labour)	\$ 8.93	\$ 6.54	\$ 6.65	\$ 9.30	\$ 10.74
Depreciation	5.60	5.03	3.69	6.65	5.41
Interest on Investment (7%)	11.26	10.68	7.57	13.25	12.79
Taxes and Other Overhead	1.49	1.09	0.94	2.47	1.61
Rent (Cash & Share)	<u>0.75</u>	<u>3.35</u>	<u>2.13</u>	<u>1.04</u>	<u>2.22</u>
Total Fixed Costs	\$ 19.10	\$ 20.15	\$ 14.33	\$ 23.41	\$ 22.03
Labour Cost	<u>7.49</u>	<u>4.65</u>	<u>3.41</u>	<u>7.48</u>	<u>5.00</u>
TOTAL PRODUCTION COST	\$ 35.52	\$ 31.34	\$ 24.39	\$ 40.19	\$ 37.77
Return Over Variable Cost (Excluding Labour)	\$ 13.95	\$ 15.33	\$ 13.01	\$ 21.16	\$ 20.87
Return to All Labour, Management & Investment	6.86	9.41	8.38	12.04	13.85
Return to Unpaid Labour & Management	- 6.36	- 5.37	- 2.49	- 3.30	- 3.05
Land Investment/Cultivated Acre	\$144.53	\$162.02	\$ 93.22	\$145.38	\$145.41
Machinery Investment/Cult. Acre	32.49	28.61	23.07	41.23	38.33
Bldg., Crops, Supp. Inv./Cult. Ac.	<u>22.29</u>	<u>21.81</u>	<u>18.21</u>	<u>23.23</u>	<u>29.93</u>
Total Investment/Cultivated Acre	\$199.31	\$212.44	\$134.50	\$209.84	\$213.67
Labour Hours/Cultivated Acre	3.9 hr.	2.5 hr.	2.1 hr.	5.0 hr.	2.7 hr.
Cultivated Acres Per Farm	466	783	1,394	312	664





only 1.3% of its cultivated acres in wheat in 1970 and 5.7% of its cultivated acres in rapeseed as compared to 6.5% and 12.8% respectively for the 769 to 1,422 cultivated acre group. As in the Thin Black soil zone, the percentage of cultivated acres in hay and silage was much higher for the smaller enterprises while the percentage of cultivated acres in summerfallow was greater for the larger enterprises. Costs per cultivated acre for the Peace River farms generally decreased as enterprise size increased [see Table 5(c)].

The return to labour, management and investment per cultivated acre was \$6.38 for the 321 to 510 cultivated acre group, \$10.59 for the 511 to 768 cultivated acre group and \$8.31 for the 769 to 1,422 cultivated acre group. The higher return for the 511 to 768 cultivated acre group was due to a higher value of production per acre. This in turn was due to higher per acre yields of barley, oats, rapeseed and forage seed.

On an enterprise basis, the return to labour, management and investment for the three size groups would be \$2,469.00, \$6,799.00 and \$8,426.00 respectively.

#### DEFINITIONS

Depreciation - The loss in value of an asset due to wear, tear and obsolescence over a set period of time.

Value of Production - For crop enterprises, the value of production is the total market value of all crops produced on cultivated land in a one-year period.

Other Cash Costs - In this study, other cash costs include items such as custom work, crop and hail insurance and twine.

Variable Costs - These are costs that vary directly with the level of output (e.g. fertilizer, seed, and machinery operating costs).

Fixed Costs - These are costs that will be incurred during the year regardless of the level of production. Fixed costs include land taxes, rent, depreciation and interest on the capital invested in the enterprise.





Table 6(a)

Distribution of Crop Acres

	<u>Peace River</u>	<u>Peace River</u>	<u>Peace River</u>
Farm Size (Cultivated Acres)	(221-510)	(511-768)	(769-1422)
Number of Farms	19	18	18
Cultivated Acres Per Farm	387	642	1014
<u>Acres:</u>			
Wheat	5	24	66
Barley	79	109	171
Oats	31	44	57
Rapeseed	22	87	130
Other Cereal Crops	5	19	18
Hay & Silage	114	108	148
Specialty Crops & Forage Seed	24	50	65
Improved Pasture	34	45	69
Summerfallow	73	156	290

% of Cultivated Acres in:

Wheat	1.3	3.7	6.5
Barley	20.4	17.0	16.9
Oats	8.0	6.9	5.6
Rapeseed	5.7	13.6	12.8
Other Cereal Crops	1.3	2.9	1.8
Hay & Silage	29.5	16.8	14.6
Specialty Crops & Forage Seed	6.2	7.9	6.4
Improved Pasture	8.8	7.0	6.8
Summerfallow	18.8	24.2	28.6



Table 6(b)

Value of Production Per Acre

	<u>Peace River</u>	<u>Peace River</u>	<u>Peace River</u>
Farm Size (Cultivated Acres)	(221-510)	(511-768)	(769-1422)
Number of Farms	19	18	18
<u>Wheat:</u>			
Yield Per Acre	30.0 bus.	25.4 bus.	25.7 bus.
Average Price/Bushel	\$ 0.92	\$ 1.15	\$ 1.27
Gross Return/Acre	\$27.77	\$29.22	\$32.54
<u>Barley:</u>			
Yield Per Acre	29.0 bus.	36.3 bus.	30.4 bus.
Average Price/Bushel	\$ 0.67	\$ 0.67	\$ 0.66
Gross Return/Acre	\$19.57	\$24.28	\$20.08
<u>Oats:</u>			
Yield Per Acre	44.2 bus.	51.4 bus.	40.3 bus.
Average Price/Bushel	\$ 0.47	\$ 0.49	\$ 0.44
Gross Return/Acre	\$20.88	\$25.21	\$17.80
<u>Rapeseed:</u>			
Yield Per Acre	13.5 bus.	20.0 bus.	18.6 bus.
Average Price/Bushel	\$ 2.38	\$ 2.39	\$ 2.40
Gross Return/Acre	\$32.18	\$47.89	\$44.62





Table 6(c)

Peace River Region

Costs and Returns Per Cultivated Acre

	<u>Peace River</u>	<u>Peace River</u>	<u>Peace River</u>
Farm Size in Cultivated Acres	(221-510)	(511-768)	(769-1422)
Number of Farms	19	18	18
Value of Production Per Acre	\$ 16.68	\$ 20.62	\$ 17.71
<u>Costs:</u>			
Seed	\$ 0.90	\$ 0.83	\$ 0.79
Fertilizer & Chemicals	0.91	1.06	1.39
Other Cash Costs	<u>0.64</u>	<u>0.57</u>	<u>0.52</u>
Total Direct Cash Costs	\$ 2.45	\$ 2.46	\$ 2.70
Machinery Operating Costs	2.90	2.57	2.19
Bldg. Maintenance & Utilities	<u>0.33</u>	<u>0.35</u>	<u>0.29</u>
Total Variable Cost (Excl. Labour)	\$ 5.68	\$ 5.38	\$ 5.18
Depreciation	3.81	3.61	3.46
Interest on Investment (7%)	7.81	7.27	6.66
Taxes and Other Overhead	0.82	1.04	0.76
Rent (Cash & Share)	<u>0.16</u>	<u>0.15</u>	<u>0.07</u>
Total Fixed Costs	\$ 12.60	\$ 12.07	\$ 10.95
Labour Cost	<u>6.63</u>	<u>4.39</u>	<u>3.72</u>
TOTAL PRODUCTION COST	\$ 24.91	\$ 21.84	\$ 19.85
Return Over Variable Cost (Excluding Labour)	\$ 11.01	\$ 15.24	\$ 12.53
Return to All Labour, Management & Investment	6.38	10.59	8.31
Return to Unpaid Labour & Management	- 1.97	2.82	0.95
Land Investment/Cultivated Acre	\$ 76.47	\$ 68.78	\$ 71.03
Machinery Investment/Cult. Acre	26.33	26.28	24.01
Bldg., Crops, Suppl. Inv./Cult. Ac.	<u>9.51</u>	<u>16.55</u>	<u>10.45</u>
Total Investment/Cultivated Acre	\$112.31	\$111.61	\$105.49
Labour Hours/Cultivated Acre	3.9 hr.	2.8 hr.	2.5 hr.
Cultivated Acres Per Farm	387	642	1,014



Total Production Costs - The sum of all variable, fixed and labour costs.

Return Over Variable Cost (Excluding Labour) - This is the return left after subtracting all variable costs (except labour) from the value of production.

Return to All Labour, Management and Investment - This is the return to the resources invested in the enterprise and is calculated by subtracting variable costs, depreciation and overhead costs from the value of production.

Return to Unpaid Labour and Management - Is the return left after subtracting all variable, fixed and paid labour costs from the value of production.

Assumed Values

1. Repair costs, depreciation and interest on investment for buildings and machinery were all allocated in the proportion they were used by the crop enterprise.
2. Interest at 7% was charged on the capital invested in the crop enterprise.









